

**CLAIMS:**

1. A method for producing a mold, comprising:
  - a step of producing a mold material by casting;
  - 5 a step of obtaining measurement data by measuring a shape of the mold material by a measuring device; and
  - a step of machining a reference plane and a product forming plane of said mold material by a mold working machine so as to reduce a work amount of a product forming plane of said mold material based on this measurement
- 10 data to produce a mold.
2. The method for producing the mold according to claim 1,
  - wherein when the reference plane and the product forming plane of said mold material is worked by said mold working machine, said reference
  - 15 plane is previously worked, and said product forming plane is worked with the worked reference plane as a supporting surface of said mold material in said mold working machine.
- 20 3. The method for producing the mold according to claim 2,
  - wherein said product forming plane is worked after the decision as to what portions of said product forming plane are worked and how many times they are worked is made.
- 25 4. The method for producing the mold according to claim 1,
  - wherein said measurement data is sent to a computer, and after said computer performs a computation to reduce a work amount at the occasion of

machining said product forming plane of said mold material with said mold working machine based on this measurement data and mold design data stored in said computer, the computer controls said mold working machine to work said mold material.

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5. The method for producing the mold according to claim 4,  
wherein on display means of said computer, an envelope model of said  
mold material generated based on said measurement data and a mold model  
generated based on said mold design data are displayed, then said envelope  
10 model is moved in directions of three axes orthogonal to one another  
respectively and rotated around the three axes, thereby bringing this envelope  
model into close proximity of said mold model, and at this time of its being in  
close proximity thereof, said computer performs the computation to reduce  
the work amount of said product forming plane.

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6. The method for producing the mold according to claim 5,  
wherein bringing said envelope model into close proximity of said  
mold model means placing all parts of said mold model inside said envelope  
model, and bringing a product forming plane of said envelope into close  
20 proximity of the product forming plane of the mold model.

7. The method for producing the mold according to claim 4,  
wherein an estimated amount of deformation occurring when said  
mold material is produced by casting is stored in said computer, and data  
25 including this estimated amount is sent to the cast mold model working  
machine for producing a cast mold model used to produce said mold material

to thereby produce said cast mold model.

8. The method for producing the mold according to claim 7, said estimated amount stored in said computer is reset with said measurement data.

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9. An apparatus for producing a mold, comprising:

a measuring device for measuring a shape of a mold material produced by casting;

10 a computer into which measurement data from this measuring device is inputted; and

a mold working machine controlled by the computer to work said mold material and produce a mold from the mold material,

15 wherein said computer has storage means for storing said measurement data and mold design data, and computing means for computing data for making said mold working machine work a reference plane and a product forming plane of said mold material to reduce a work amount of the product forming plane of said mold material based on these measurement data and model design data.

20 10. The apparatus for producing the mold according to claim 9,

wherein said computing means previously makes said mold working machine work said reference plane, and thereafter computes data for making said mold working machine work said product forming plane with the worked reference plane as a supporting surface of said mold material in said mold

25 working machine.

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11. The apparatus for producing the mold according to claim 10,  
wherein working capability data of said mold working machine is  
stored in said storage means, and after computing what portions of said  
product forming plane are worked and how many times they are worked,  
5 based on the working capability data, said computing means makes said mold  
working machine work said product forming plane.

12. The apparatus for producing the mold according to claim 9,  
wherein said computer has display means for displaying an envelope  
10 model of said mold material generated based on said measurement data and a  
mold model generated based on said mold design data, and operation means  
for bringing the envelope model into close proximity of said mold model by  
moving said envelope model in directions of three axes orthogonal to one  
another respectively and rotating it around the three axes, and by its being in  
15 close proximity thereof, the computation to reduce the work amount of said  
product forming plane is performed in said computing means.

13. The apparatus for producing the mold according to claim 12,  
wherein bringing said envelope model into close proximity of said  
20 mold model means placing all parts of said mold model inside said envelope  
model, and bringing a product forming plane of said envelope into close  
proximity of the product forming plane of the mold model.

14. The apparatus for producing the mold according to claim 9, further  
25 comprising a cast mold model working machine for producing a cast mold  
model used for producing said mold material,

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wherein an estimated amount of deformation at the time of casting of said mold material is stored in said storage means, data including this estimated amount is sent to said cast mold model working machine, and said cast mold model is produced by said cast mold model working machine based  
5 on this data.

15. The apparatus for producing the mold according to claim 14,  
wherein said estimated amount stored in said storage unit is resettable  
based on said measurement data.  
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16. The apparatus for producing the mold according to claim 9,  
wherein said mold working machine comprises a numerically  
controlled machine tool.